ORDER NO. AVS9706031A8

Service Manual

Combination Camera

WV-BS304E/WV-BST300

Simplified

Please file and use this manual together with the service manual for the Model No. WV-BSR300, order NO. AVS9703020C8.

SPECIFICATIONS

Combination Camera

Power Source :	24V AC, 50 Hz for WV-BS304E,230V AC, 50Hz for WV-BST300
Power Consumption :	9 W for WV-BS304E, 11 W for WV-BST300
Ambient Operating Temperature :	–10°C - +50°C
Dimensions :	130 (D) x 191 (H) mm for WV-BS304E 130 (D) x 195 (H) mm for WV-BST300
Weight :	Approx. 2 kg

Camera

Pick-up Device :	1/3" CCD with 753 (H) x 582 (V) pixels for WV-BS304E 1/4" CCD with 752 (H) x 582 (V) pixels for WV-BST300
Synchronization :	Internal/Line-lock/Multiplexed/Vertical Drive (VD2)
Horizontal Scanning Frequency :	15.625 KHz
Vertical Scanning Frequency :	50 Hz
Video Output :	1.0 V[p-p] CCIR composite/75 Ω
Horizontal Resolution :	More than 570 lines at centre
Vertical Resolution :	More than 400 lines at centre
Signal-to-noise Ratio :	46 dB (AGC OFF, weight off)
Minimum Illumination :	0.08 lx (0.008 footcandle) for WV-BS304E 0.2 lx (0.02 footcandle) for WV-BST300
Zoom Speed :	Approx. 6 s (TELE/ WIDE) in Manual mode
Focus Speed :	Approx. 5 s (FAR/NEAR) in Manual mode
Iris :	Automatic (Open / Close is possible)/Manual

Panasonic

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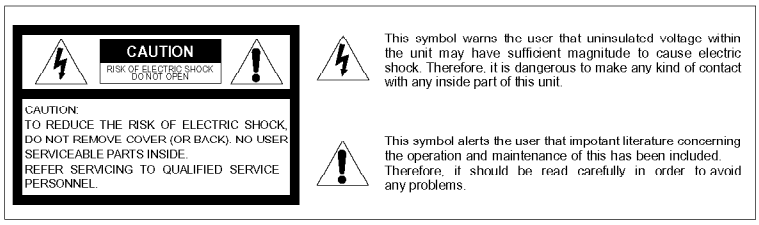
⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.


CAUTION
RISK OF ELECTRIC SHOCK DO NOT OPEN
CAUTION:
TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.
This symbol warns the user that uninsulated voltage within the unit may have sufficient magnitude to cause electric shock. Therefore, it is dangerous to make any kind of contact with any inside part of this unit.
This symbol alerts the user that impotant literature concerning the operation and maintenance of this has been included. Therefore, it should be read carefully in order to avoid any problems.

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are indicated by the "⚠" mark on the schematic diagram and the replacement parts list. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire, or other hazards.
Do not modify the original design without permission of manufacture.

Maximum Aperture Ratio :	1 : 1.2 (WIDE) - 1.9 (TELE) for WV-BS304E, 1 : 1.7 (WIDE) - 2.5 (TELE) for WV-BST300
Focal Length :	5 - 50 mm for WV-BS304E, 6.5 - 65 mm for WV-BST300
Electronic Shutter :	1/50 (OFF), 1/100, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000
Back Light Compensation :	Normal/Automatic/Preset mode
Angular Field of View :	
Horizontal :	5.2° - 52.3° for WV-BS304E, 3.3° - 32.1° for WV-BST300
Vertical :	4.0° - 39.7° for WV-BS304E, 2.4° - 24.0° for WV-BST300
Zoom Ratio :	x 10
Iris Range :	F1.2 - 22, CLOSE for WV-BS304E, F1.7 - 22, CLOSE for WV-BST300

Pan / Tilt

Panning Range :	360° Endless
Panning Angle Setting :	Possible (in Auto-Pan mode)
Panning Mode :	Manual/Auto Pan
Panning Speed :	Manual : Approx. 3°/s - 24°/s eight steps
Tilting Range :	0 - 90°
Tilting Speed :	Manual : Approx. 1.5°/s - 12°/s. eight steps

Weights and dimensions indicated are approximate.
Specifications are subject to change without notice.

ACCESSORIES

Camera Mounting Angle . . . . . 1 pc.
Camera Fixing Screw . . . . . 1 pc.
Connector (for WV-BS304E) . . . . . 1 pc.
Decoration Cover . . . . . 1 pc.

OPTIONAL ACCESSORIES

Dome Cover (Smoked type) WV-CS1S
Ceiling Mount Bracket WV-Q105E/WV-Q106E/WV-Q107E
Wall Mount Bracket WV-Q108E

CONTENTS

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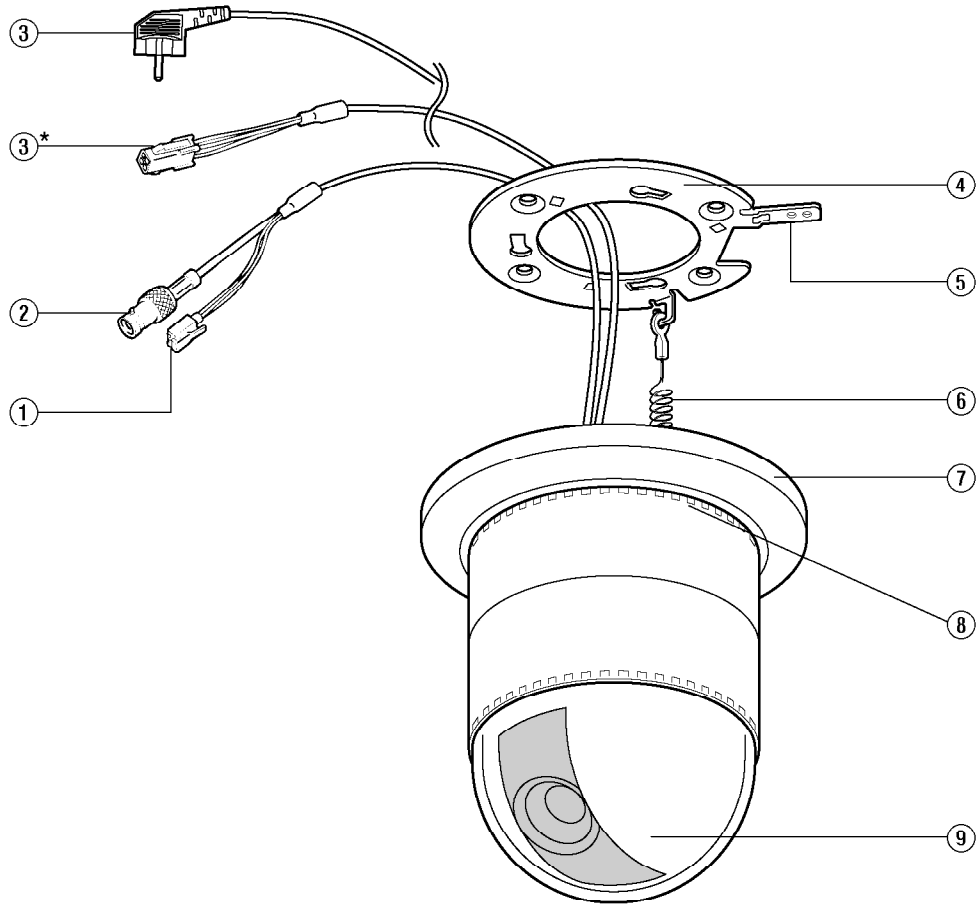
This service manual describes difference from the WV-BSR300.

CONSTRUCTION



(1) Data Cable (only for WV-BSR300)

(2) Video Output Connector

(3) Power Cable for WV-BSR300 and WV-BST300

(3*) Power Cable for WV-BS304E

(4) Camera Mounting Angle

(5) Panning Start Point

(6) Fall Prevention Wire

(7) Decoration Cover

(8) Cooling Holes

(9) Dome Cover

INSTALLATION

Precaution:

The following installations should be made by qualified service personnel or system installers.

Setting the camera switches (only for WV-BSR300)

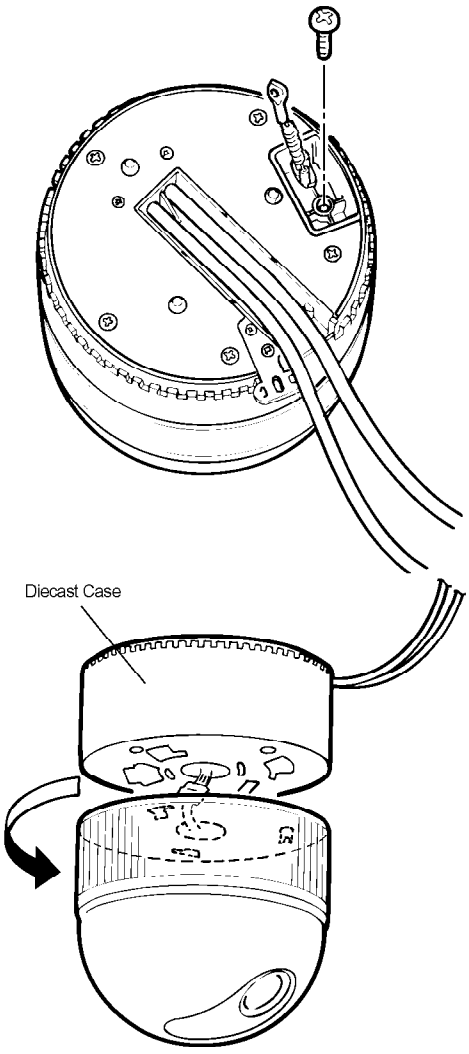
- To reset the communication parameters to the factory preset values, for example, when operating multiple cameras in a daisy chain connection, set the switches inside the camera as shown in the table below.

1. Disassemble the camera

Confirm that the power is turned off.

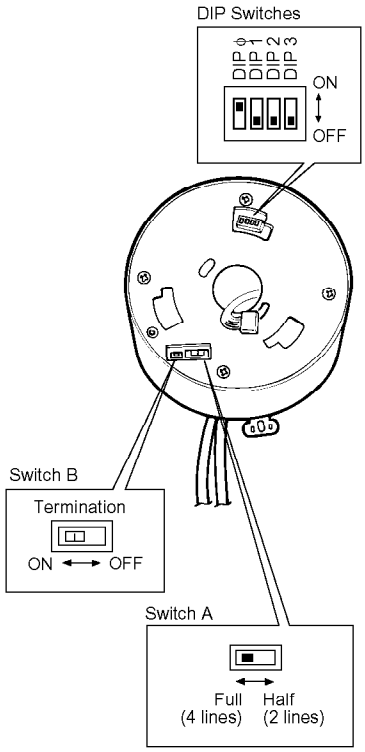
Remove the screw from inside the hole for the fall prevention wire. Hold the diecast case containing the camera and rotate it to the left as shown below.

Note: Setting of switches while the power is on may cause a malfunction. Make sure the power is turned off before setting the switches.



2. Setting the switches

Set the switches as follows:



Switch A: Full duplex (four lines)/Half duplex (two lines) switch
Switch B: Termination ON/OFF switch
Switch C: Dip switches (become effective when the power is turned on)

Initialization of soft-ware communication parameters	DIP 3	OFF	Normal Setting
		ON	Initial Settings

Notes:

- Select OFF after resetting the parameters by selecting ON.
- The factory settings is OFF.

	DIP 1	DIP 2	
Camera Unit No.	OFF	OFF	01 - 32
	OFF	ON	33 - 64
	ON	OFF	65 - 96
	ON	ON	Inhibition

The factory settings for the dip switch 1 and 2 are both OFF.

CCIR or EIA	DIP ϕ	OFF	EIA
		ON	CCIR

Note: The dip switch ϕ is not for changing EIA to CCIR or CCIR to EIA. This switch is set at factory. Do not change the setting of this switch. The factory setting is ON.

3. Assemble the camera

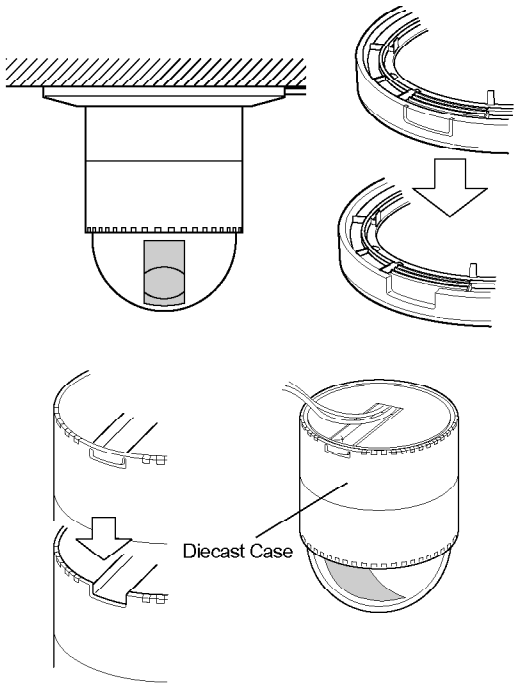
Reverse the disassembly procedure. Take care not to cut any cables.

Precautions:

1. The following installation work should be referred to qualified service personnel or system installers and must conform with local codes.
2. Be sure to select a ceiling board that is strong enough to support this camera.
3. When mounting this camera onto the ceiling except the above, use the optional Ceiling Bracket WV-Q105E, WV-Q106E or WV-Q107E.
4. When mounting this camera to the wall, use the optional Wall Mount Bracket WV-Q108E.

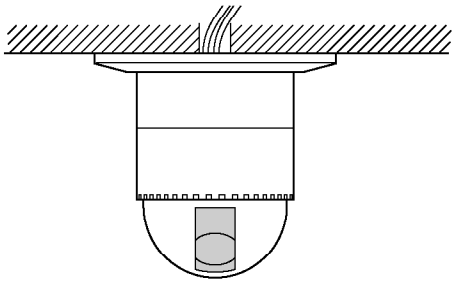
a. Sideway cable exit

Prepare a cutout in the diecast case and decoration cover as shown in the following drawing.

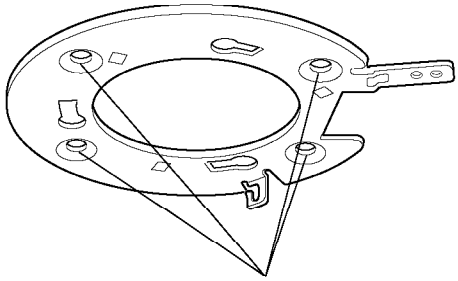


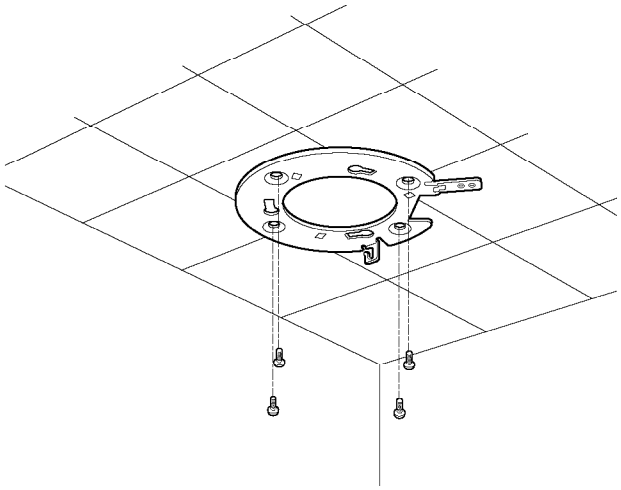
Note: Be sure to protect the video and power cables. Otherwise, the cut edges will damage the cables.

b. Top cable exit



1. Remove the mounting screw (M3) from the camera mounting angle (provided).
2. Mark the mounting holes on the ceiling, using the removed camera mounting angle as a template.



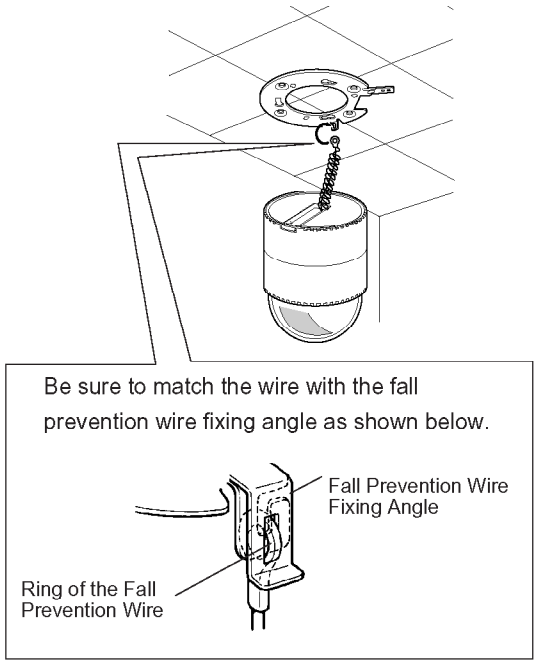


3. Fix the camera mounting angle to the ceiling with four screws (not provided).

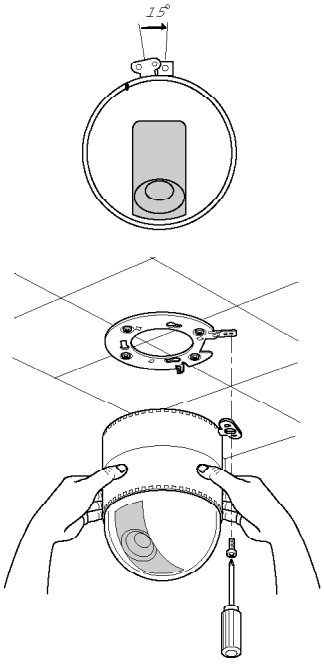
   Caution:

   The installation should be strong enough to support 4 times the total weight.

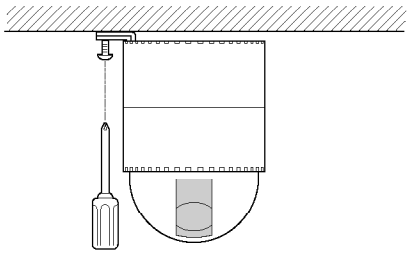
4. Hook the fall prevention wire on the camera mounting angle.


Be sure to match the wire with the fall prevention wire fixing angle as shown below.
Fall Prevention Wire Fixing Angle
Ring of the Fall Prevention Wire

5. Mount the camera on the camera mounting angle and rotate the camera clockwise.



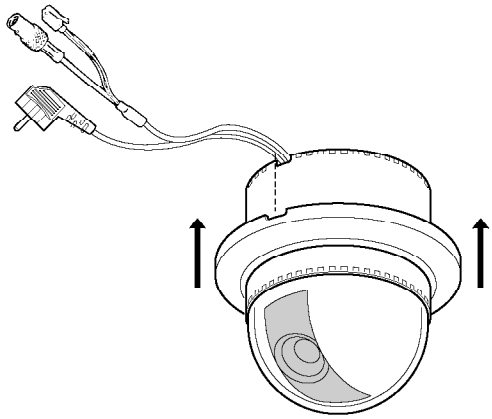
6. Tighten the fixing screw M3 (provided).
   Notes :
   1. Tighten the camera fixing screw with a screwdriver.
   2. Follow the instructions given here to ensure that the camera and camera mounting angle are installed safely.
   3. When removing the camera from the camera mounting angle, loosen and press up the camera fixing screw (M3) by using a screwdriver.



7. Fix the decoration cover to the camera mounting angle.

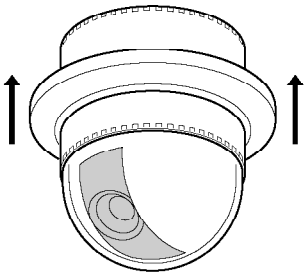
a. Sideway cable exit

Pass the cables through the cutout made in the diecast case and decoration cover (refer to item a, INSTALLATION).



b. Top cable exit

Push the decoration cover against the camera mounting angle.

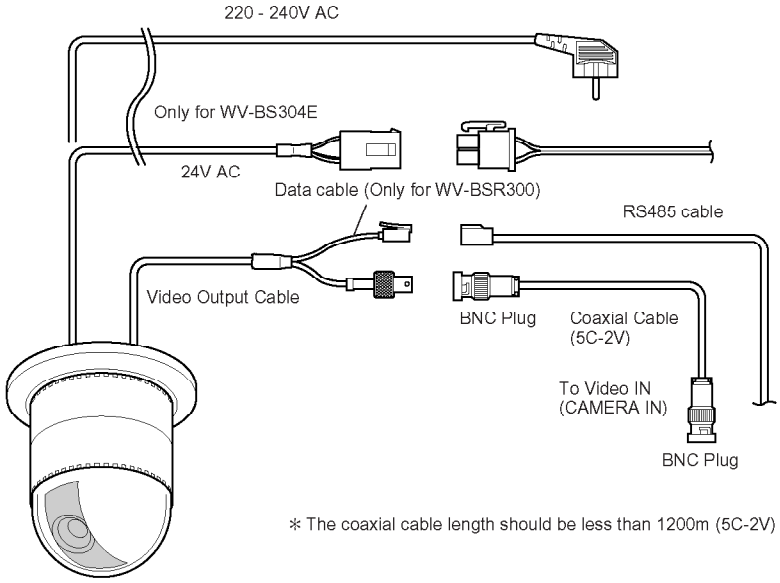


When using the optional bracket for this mounting, refer to the Operating Instructions of WV-Q105E, WV-Q106E, WV-Q107E or WV-Q108E.

CONNECTIONS

Precaution:

The following connections should be made by qualified service personnel or system installers.



Note: When powered up, the unit performs a self-check (including one panning, tilting, zooming and focusing operation).

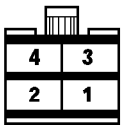
• Power supply connection

Recommended wire gauge sizes for AC 24V line.

Copper wire size (AWG)		#24 (0.22mm²)	#22 (0.33mm²)	#20 (0.52mm²)	#18 (0.83mm²)
Length of Cable (Approx.)	(m)	20	30	45	75
	(ft)	65	100	160	260

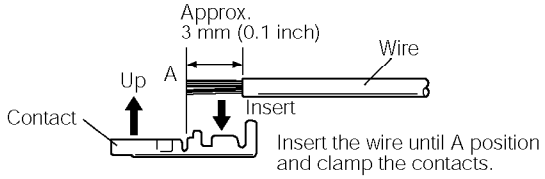
Accessory Connector Information

Pin No.	Power Source
1 :	AC 24 V LIVE
2 :	AC 24 V NEUTRAL
3 :	Ground
4 :	Not used



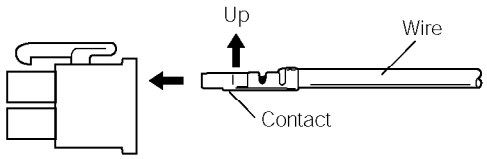
How to assemble the cable with the accessory connector

Strip back the cable jacket approx. 3 mm (0.1 inch) and separate the individual conductors.



Prepare the individual conductors for clamping. Use MOLEX band tool part number 57027-5000 (for UL-Style Cable UL1015) or 57026-5000 (for UL-Style UL-1007) for clamping the contacts.

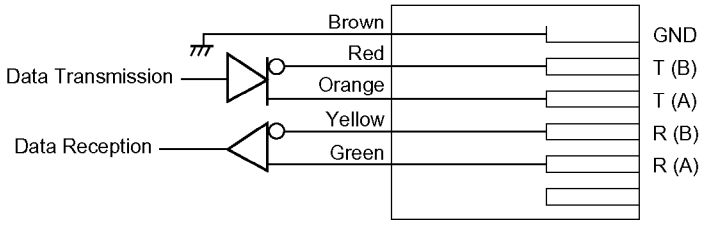
After clamping the contacts, push them into the proper holes in the accessory connector of this camera until they snap in place.



CAUTIONS

1. Shrinking the cable-entry seal is a one-time procedure. Do not shrink the cable-entry seal until it has been ascertained that the unit is functioning.
   CONNECT TO AC 24V CLASS 2 POWER SUPPLY ONLY.
2. To prevent fire or electric shock hazard, use a UL listed wire (VW-1, style 1007) cable for the AC 24V input terminals.

• RS485 site connection



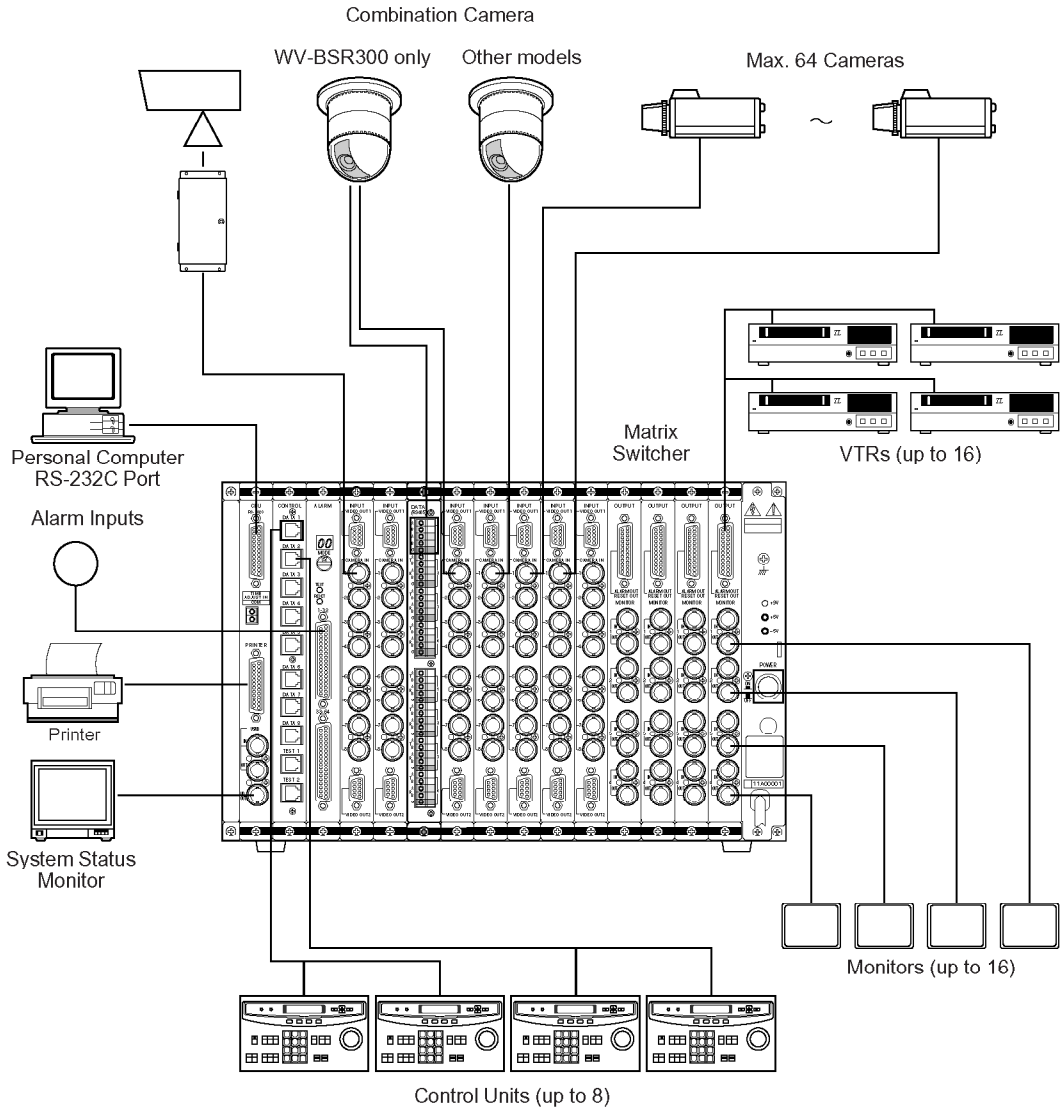
For daisy chain connection of multiple cameras, make sure to match each male connector with its female counterpart.

Note:

Use the cable that is described below for RS485 site communication by using WV-BSR300.

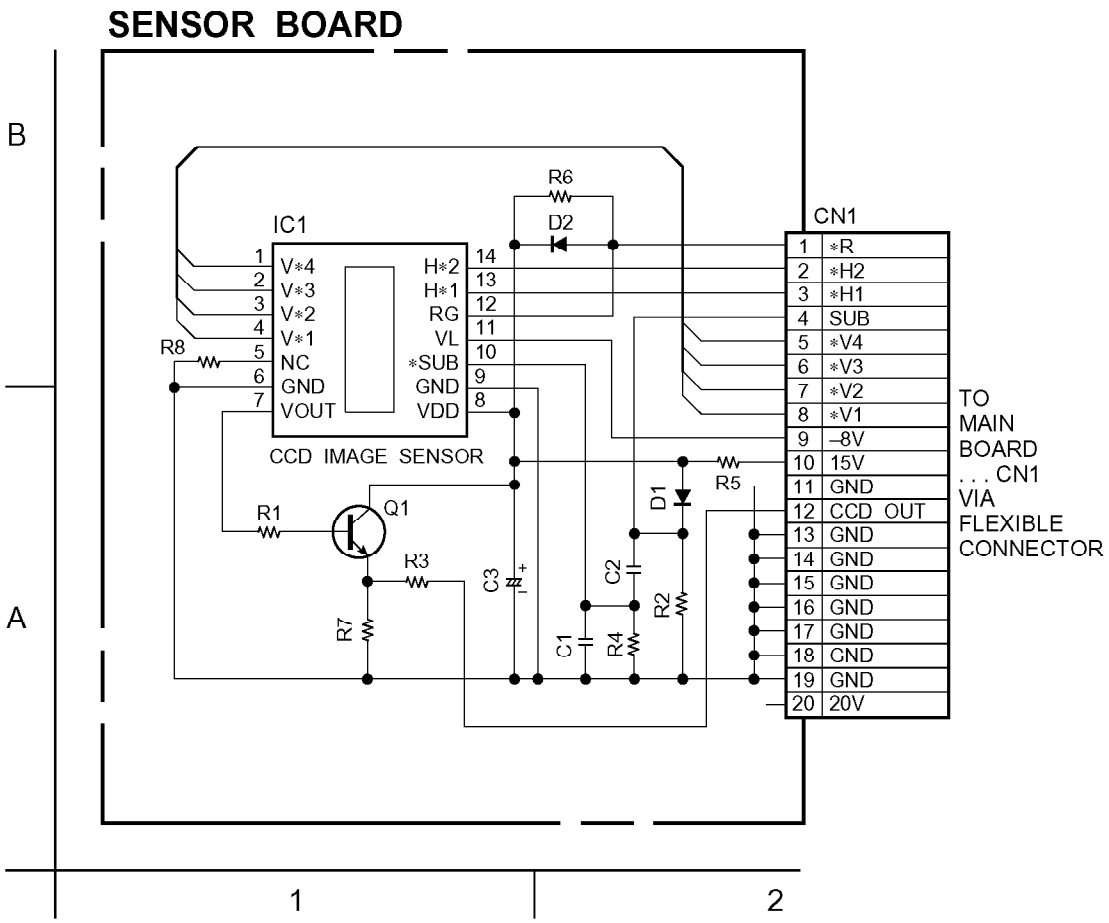
- Shielded, twisted pair cable
- Low impedance
- Wire gauge size is thicker than AWG #22 (0.33 mm^2).

SYSTEM CONNECTION



Note: Eight cameras are maximum that can be connected with a data board even if the cameras are connected by the daisy chain connection.

SCHEMATIC DIAGRAM OF SENSOR BOARD FOR WV-BST300



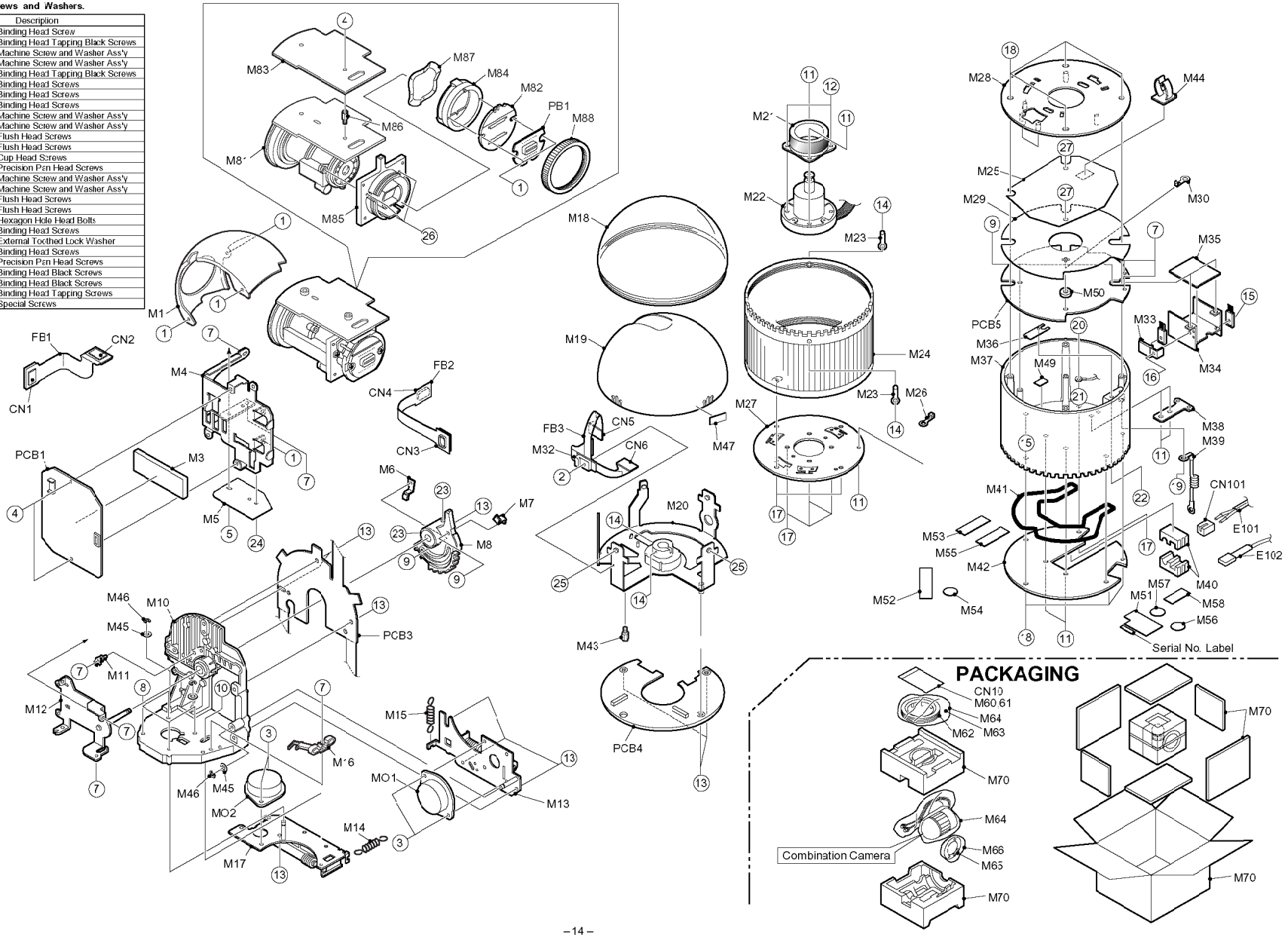
<Index>
Sensor Board

IC1 A1/B1
Q1 A1
D1 A2
D2 B2

EXPLODED VIEW

○ **Numbers show Screws and Washers.**

No.	Screws	Description
①	XSB2+4FX	Binding Head Screw
②	XTB2+4GFXK	Binding Head Tapping Black Screws
③	XYN2+J4FN	Machine Screw and Washer Ass'y
④	XYM2+J6FN	Machine Screw and Washer Ass'y
⑤	XTB2+6GFXK	Binding Head Tapping Black Screws
⑥	XS2+5FX	Binding Head Screws
⑦	XSB26+4FX	Binding Head Screws
⑧	XSB26+15FX	Binding Head Screws
⑨	XYN26+J6FN	Machine Screw and Washer Ass'y
⑩	XYN26+F15FN	Machine Screw and Washer Ass'y
⑪	XSS26+4FX	Flush Head Screws
⑫	XSS26+16FX	Flush Head Screws
⑬	YWV1EC0270A4	Cup Head Screws
⑭	XQN2+A4FN	Precision Pan Head Screws
⑮	XYN3+F8FX	Machine Screw and Washer Ass'y
⑯	XYN3+F12FX	Machine Screw and Washer Ass'y
⑰	XSS4+6FX	Flush Head Screws
⑱	XSS4+12FX	Flush Head Screws
⑲	XVE4A8FX	Hexagon Hole Head Bolts
⑳	XSB4+6FX	Binding Head Screws
㉑	XWC4BFX	External Toothed Lock Washer
㉒	XSB26+12FX	Binding Head Screws
㉓	XQN2+A8FN	Precision Pan Head Screws
㉔	XSB2+3FXK	Binding Head Black Screws
㉕	XSB3+4FXK	Binding Head Black Screws
㉖	XTB2+8GFX	Binding Head Tapping Screws
㉗	YWV1ED0270A4	Special Screws



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C-632 Ⓝ 5, 7, 23